CLAIMS

Claims 14-26 are canceled through this amendment, without prejudice. Claims 1-13 remain pending.

Please amend the claims as follows:

1. (Original) A method for the identification and quantification of admixtures of at least a first and a second biomolecular variant comprising: applying at least one condition gradient upon a detection array along a gradient axis having discrete locations, wherein the gradient conditions affect at least one of the rate of binding or reaction between the variants and at least one reactant; measuring the rate of binding or reaction between the variants and the at least one reactant at the discrete locations along the gradient axis at discrete times; and analyzing measurements of the rate of binding or reaction from the discrete locations along the gradient axis at discrete times to determine the quantities of each of the first and a second biomolecular variant present in the admixture.

2. (Original) The method of claim 1, further comprising applying a second condition gradient upon the detection array along a second gradient axis, wherein the gradient conditions affect the rate of binding or reaction between the variants and the at least one reactant.

3. (Original) The method of claim 2 wherein the second gradient axis is perpendicular to the first condition gradient.

4. (Original) The method of claim 1, wherein the at least one condition gradient is selected from the group comprising a pH gradient, a light absorption gradient or a temperature gradient.

5. (Original) A method for the discrimination of biomolecules in an admixture comprising the steps of:

a. obtaining a sample comprising at least a first and a second biomolecule;

b. exposing the sample to at least one gradient condition along a gradient axis to alter the inherent charge of the biomolecules;

c. contacting the biomolecules with at least one reactant to cause the formation of at least one reaction product; and

d. detecting at least one of a rate of binding between the biomolecules and the at least one reactant or a rate of reaction between the variants and the at least one reactant at discrete locations along the gradient axis.

6. (Original) A method for the discrimination of biomolecules in an admixture comprising the steps of:

a. obtaining a sample comprising at least first and a second biomolecule;

b. exposing the sample to at least one gradient condition along a gradient axis to alter the inherent energy of the biomolecules;

c. contacting the biomolecules with at least one reactant to cause the formation of at least one reaction product; and

d. detecting at least one of a rate of binding between the biomolecules and the at least one reactant or a rate of reaction between the variants and the at least one reactant at discrete locations along the gradient axis.

7. (Original) A method for the discrimination of biomolecules in an admixture comprising the steps of:

a. obtaining a sample comprising at least first and a second biomolecule;

b. exposing the sample to at least one gradient condition along a gradient axis to alter the inherent energy and inherent charge of the biomolecules;

c. contacting the biomolecules with at least one reactant to cause the formation of at least one reaction product; and

d. detecting at least one of a rate of binding between the biomolecules and the at least one reactant or a rate of reaction between the variants and the at least one reactant at discrete locations along the gradient axis.

8. (Original) The method of claim 5, 6 or 7 further comprising the step of quantifying the amount of the first or the second biomolecule in the sample from the rate of binding between the biomolecules and the at least one reactant or a rate of reaction between the variants and the at least one reactant measured at discrete locations along the gradient axis at discrete time periods.

9. (Original) The method of claim 5 or 7 wherein the gradient condition used to alter the inherent charge of the biomolecules is a pH gradient.

10. (Original) The method of claim 6 or 7 wherein the gradient condition used to alter the inherent energy of the biomolecules is light absorption.

11. (Original) The method of claim 1 wherein the reaction product is detected using electrochemical detectors.

12. (Original) The method of claim 1 wherein the reaction product is detected using photochemical detectors.

13. (Original) The method of claim 1 wherein the biomolecules are selected from the group comprising proteins, deoxyribonucleic acids, ribonucleic acids or prions.

14.-26. (Cancelled).